

# SUPPLIER BASIC TRAINING- UNDERSTANDING OF PRODUCT SAFETY AND LIABILITY AT ODU



## Summary:

1. Basics of product safety at ODU
2. Special Characteristics & Identification of safety related products at ODU
3. Effects & handling of special characteristics for the supplier
4. Product safety & Product liability for ODU-Suppliers
5. Safety related effects for the end customer

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## PRODUCT SAFETY AT ODU



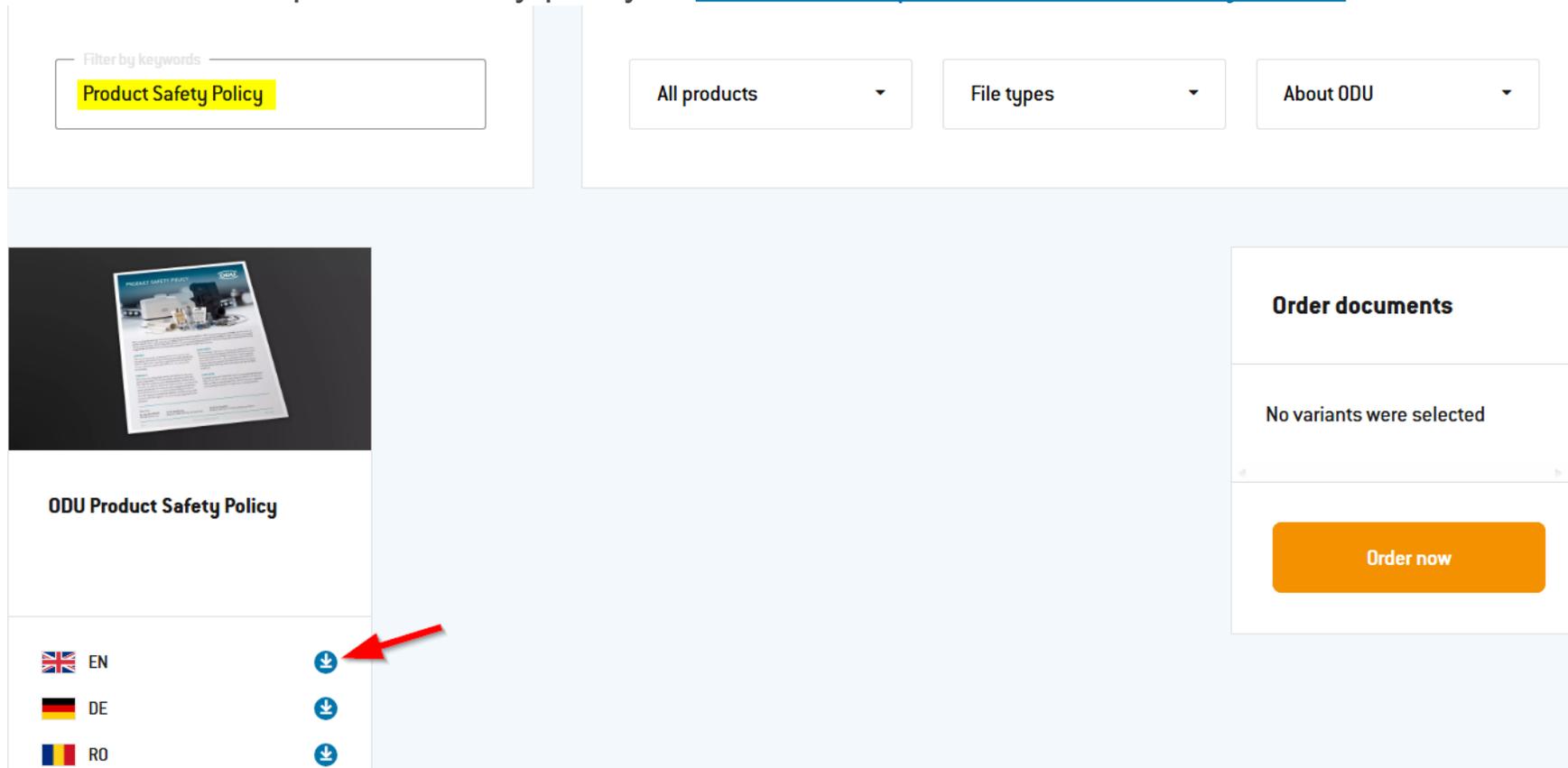
**The conformity of the products produced and supplied by ODU depends significantly on the quality provided by our suppliers!**

- The organization must ensure that products placed on the market and associated manufacturing processes meet all customer requirements as well as applicable legal and regulatory requirements. The conformity of the products placed on the market depends on the complete process chain, for this reason suppliers are equally obligated.
  - Example: The charging contact supplied by ODU must meet the electrical performance required by the customer for the intended application. The electrical performance depends not only on the design, but also on the electrical properties of the raw material supplied by the vendor.
- Product safety = a product supplied to the market by the organization must not endanger the safety and health of persons when used as intended or in a foreseeable way.
- The processes documented at ODU for the management of products related to product safety are mapped in accordance with IATF 16949 Section 4.4.1.2 "Product Safety". The principles and general corporate philosophy regarding product safety can be found in the product safety policy available on the Internet.

## PRODUCT SAFETY POLICY

The ODU internal product safety policy available on the Internet shows the organization's context regarding product safety.

You can find the product safety policy at [Downloads | ODU Connector Systems](#) → "Product Safety Policy"



Filter by keywords  
Product Safety Policy

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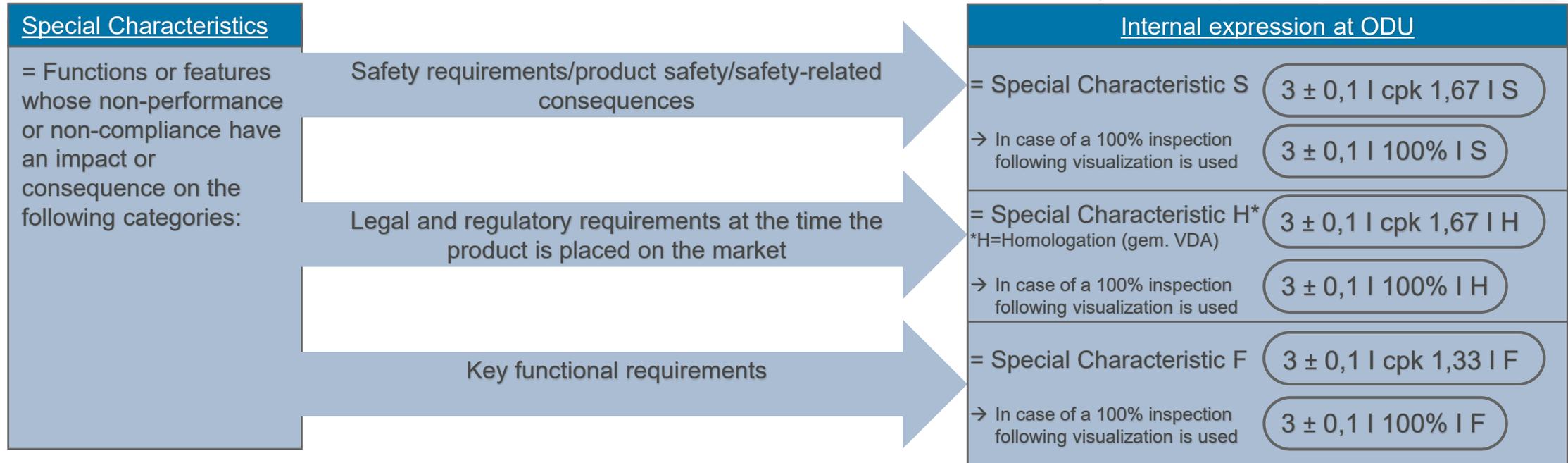
**ODU Product Safety Policy**

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## SPECIAL CHARACTERISTICS AT ODU

- Special characteristics are characteristics that require special care and are not regulated by other processes.



- Products that have an **S-Characteristic** are automatically safety-related and are marked as such. Compliance with safety-related product characteristics must be ensured either by a process capability  $\geq 1.67$ , or with a 100% inspection. Which of these verification methods is used must be determined individually together with ODU.



## ODU STANDARD CPK-REQUIREMENTS

The ODU standard requirements for process capabilities can be taken from the overview below, **unless otherwise defined**. Special characteristics with a required minimum process capability index can be verified by means of random sample tests during series production **or** by a 100% inspection. Special characteristics with a required 100% inspection can **only** be verified by the same.

Customer-specified or internally identified special characteristics	ODU Standard CpK requirements
3 ± 0,1   cpk 1,67   S	≥1,67
3 ± 0,1   cpk 1,67   H	≥1,67
3 ± 0,1   cpk 1,33   F	≥1,33

The number of special features is indicated separately on the drawing. Here is an example with two existing F-Characteristics: ( 2 | F )

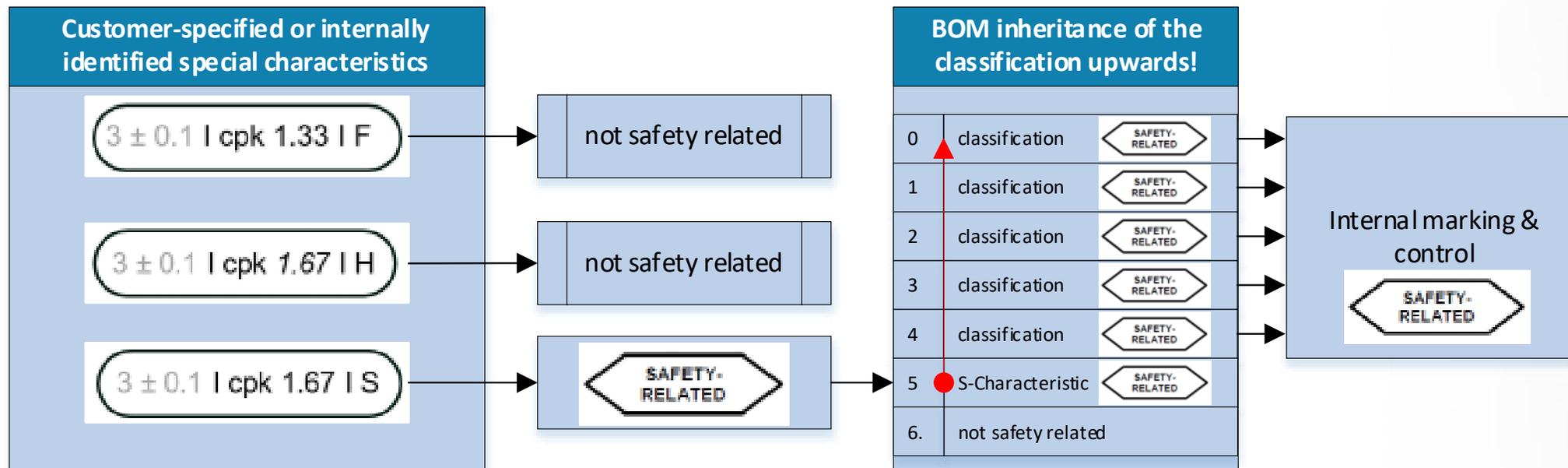


# IDENTIFICATION OF SAFETY-RELATED PRODUCTS AT ODU



All ODU products that have an **S-Characteristic** are automatically safety-related and must be marked as such. Manual identification takes place in all component-specific areas and documents that are necessary to control the manufacturing or production process. The identification is with BOM inheritance upwards, thus all subsequent materials & assemblies are marked as "safety related".

→The supplier is obligated to perform an internal risk analysis for products classified by ODU as safety-related. Internally identified risks must be discussed and agreed upon with ODU!



## INTERNAL MARKING ON COMPONENT DRAWINGS

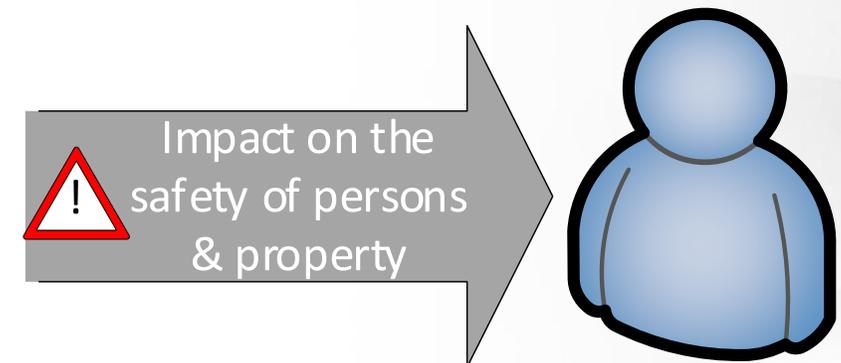
Component drawings with an S-characteristic related to the respective process step are marked with the ODU internal symbol for product safety identification (see excerpt). The identification is **with BOM inheritance upwards**, therefore all subsequent materials & assemblies are marked as "safety related".

$3 \pm 0,1$  | cpk 1,67 | S

	177.719.000.401.000	50292819	-015-	veredert, ungeprüft, veredert vorgabe fuer extern siehe D000
	177.719.000.400.000	50292830	-000-	blank
Oxaion-ID	Teile-ID/ part-ID	Oberfl./ finishing	Bemerkung/ remark	
Allgemeintoleranz /general tol.: DIN ISO 2768-mH Tolerierung /Tolerancing: DIN ISO 8015			Benennung /description:  Buchse T6  Automotive	
			Zeichnungs-Nr.:	

## CONSEQUENCES IN CASE OF MISSING MARKING

- Product risks due to missing process-related information
- Missing awareness of employees for special duty of care
- Reduced test frequency of the safety-relevant characteristics
- Errors/deviations are not detected
- Error chain continues all the way to the customer





# PRODUCT SAFETY FOR ODU SUPPLIERS

- Inquiries by ODU Project Purchasing must be made with the support of the technical specifications provided by the project team. It must be ensured that the supplier understands at an early stage all technical and safety specifications of the component(s) supplied to the organization and confirms the feasibility of these specifications. For this purpose, a written confirmation is requested from the supplier.
- The **supplier** must maintain a QM system that consistently and consistently meets the requirements of the latest version of IATF 16949 or, in consultation with **ODU**, must define and comply with a plan for the implementation and certification of a QM system in accordance with the latest version the IATF 16949.
- If the symbol for safety-related components is present on the technical specification provided by ODU, the supplier must additionally fulfill the requirements according to point 4.4.1.2 of the IATF 16949 standard (latest edition).



# PRODUCT SAFETY FOR ODU SUPPLIERS

In particular, the supplier shall ensure the following with regard to product safety:

- Determination of the legal and regulatory product safety requirements
- Risk assessment of safety related products and their manufacturing and testing processes with subsequent separate approval.
- Consistent labeling of safety related products and their development and production documents.
- Traceability according to point 10 over the entire product life cycle and additional 10 years.
- No reworking of safety related products
- Specified special characteristics from functions, safety requirements or legal and regulatory requirements as well as customer requirements are to be implemented without filtering.
- Product characteristics that affect the safety of the product shall be consistently identified and documented as special characteristics throughout the manufacturing process (drawing, FMEA, production control plan, test plan, etc.)
- Compliance with safety related product characteristics must be ensured either by a process capability  $\geq 1.67$ , or with a 100% inspection. **ODU** shall be granted access to the corresponding documents upon request.
- The **Supplier** shall only use appropriately trained staff in the development and manufacture of a safety related product.
- Changes to the product or production process must be approved before implementation. This includes an assessment of the potential impact on product safety of the intended product and process changes.



## PRODUCT SAFETY FOR ODU SUPPLIERS

In the case of special customer requirements or safety-related products, participation in sampling in accordance with PPAP (production part approval process) is required. Safety-related products must be identified as such on the PSW required in accordance with the PPAP process.

**SAFETY-RELATED**

**Part Submission Warrant**

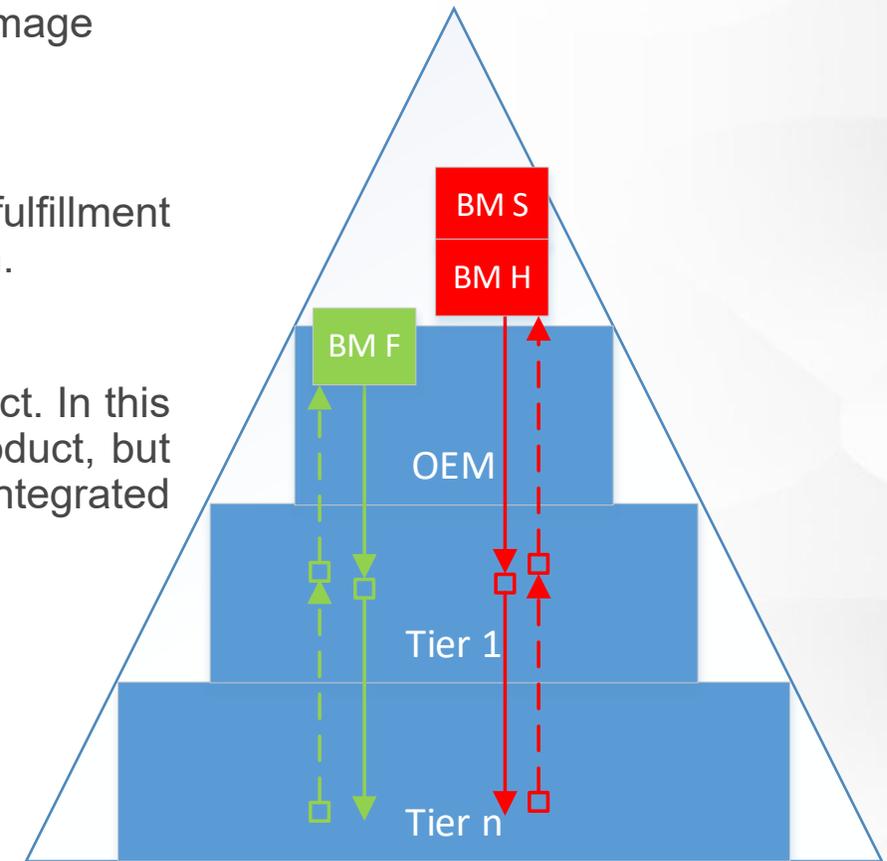
  
A PERFECT ALLIANCE.

PSW No.: \_\_\_\_\_

Part Name _____	Cust. Part Number _____
Shown on Drawing No. _____	Org. Part Number _____
Engineering Change Level _____	Dated _____
Additional Engineering Changes _____	Dated _____
<b>Safety and/or Government Regulation</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Purchase Order No. _____
	Weight (kg) _____

# PRODUCT SAFETY FOR ODU SUPPLIERS

- Product liability describes the laws and the scope of responsibility in which manufacturers & **distributors** of products are made liable for the damage caused by these products to life, body, health, freedom and property.
- The responsibility about the conformity of the delivered products & fulfillment of the Special Characteristics continues in the complete supply chain.
- Every manufacturer of a product is liable for the defects of the product. In this context, the manufacturer is not only the actual producer of the product, but also **the manufacturer of a sub-product** that is still built into or integrated into another product.





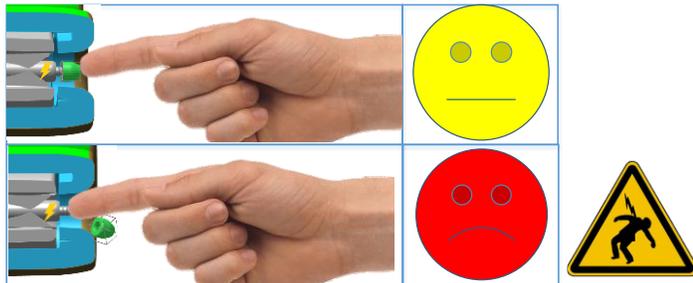
## SAFETY-RELATED CONSEQUENCES FOR THE CUSTOMER

With safety-relevant consequences for the customer is meant the potential non-conformity of a product supplied by ODU, which can cause a malfunction of the subsequent components or systems. These malfunctions can affect the reliable functioning as well as **life & limb** of the end user.

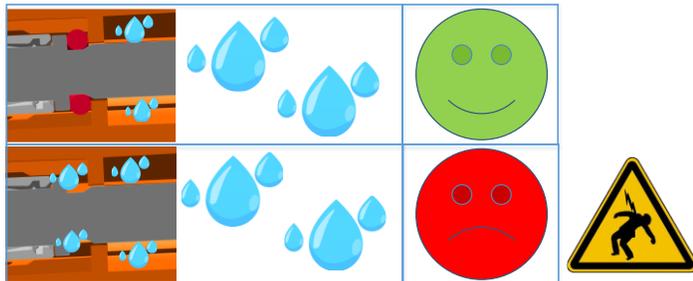
The potential nonconformities along the product development process are divided into the following divisions:

- Product- and Process development
- Maintenance
- Quality and Laboratory
- Assembly
- **Suppliers / The conformity of the products produced and supplied by ODU depends significantly on the quality provided by our suppliers!**

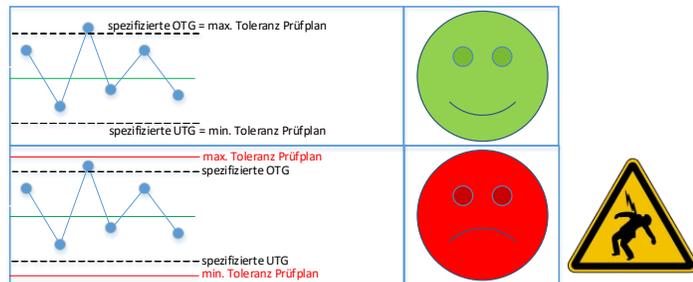
## DIVISION: SUPPLIERS



Example 1: incompletely mounted touch protection



Example 2: missing O-ring in assembly process



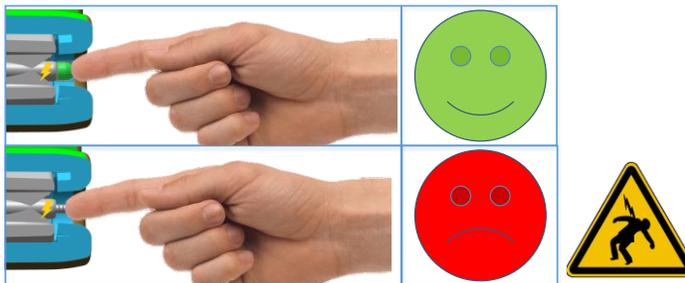
Example 3: incorrect tolerance range test plan

1. Process capability for safety-related characteristics cannot be maintained, thus no statement about absence of defects in the output is possible.  
 → **Error chain continues at ODU → System failure/ electrical shock/ fire hazard etc. possible by end customer!**
2. Missing REACH & RoHS compliance, thus toxic materials can be circulated.  
 → **Error chain continues at ODU → System failure/ electrical shock/ fire hazard etc. possible by end customer!**
3. Untested or insufficiently tested process parameters (see example 1).  
 → **Error chain continues at ODU → System failure/ electrical shock/ fire hazard etc. possible by end customer!**
4. Missing poka-yoke in the assembly process(see example 2).  
 → **Error chain continues at ODU → System failure/ electrical shock/ fire hazard etc. possible by end customer!**
5. Incorrect tolerance range for production accompanying tests, thus no detection of dimensions outside the specification (see example 3).  
 → **Error chain continues at ODU → System failure/ electrical shock/ fire hazard etc. possible by end customer!**

## DIVISION: SUPPLIERS



Example 4: systematic variation



Example 5: missing touch protection

6. Use of non-calibrated measuring and test equipment, therefore incorrect measurement results due to systematic variation possible (see example 4).  
→ **Error chain continues at ODU → System failure/ electrical shock/ fire hazard etc. possible by end customer!**
7. Safety-critical spare parts not filtered or available, thus no replacement possible in case of wear.  
→ **Error chain continues at ODU → System failure/ electrical shock/ fire hazard etc. possible by end customer!**
8. Non-compliance with the maintenance interval, thus high risk of non-detection of wear, deviations or loss of function possible.  
→ **Error chain continues at ODU → System failure/ electrical shock/ fire hazard etc. possible by end customer!**
9. Missing assembly of safety-related components (see example 2 & 5).  
→ **Error chain continues at ODU → System failure/ electrical shock/ fire hazard etc. possible by end customer!**



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ATTENTION

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